Senegal, Egypt, Morocco, Algeria and Tunisia) are contributing # 80% of the pharma market in Africa. Despite maintaining regional offices within Africa, many major Pharma and device manufacturers frequently overlook the continent when sponsoring clinical studies. Cultural barriers, political upheaval and uneven infrastructure are certainly causes for the lack of interest. But Africa offers tremendous expertise and opportunity for drug and device companies looking for cost-effective study sites and appropriate patient drug market populations. Currently more than 45% of the whole continent's clinical trials are being conducted in South Africa and hence the need for the next generation clinical trial destination for a drug and device manufacturers. These companies can also consider technology transfer by partnering with local drug manufacturers and research centers to diversify their business portfolio. **CONCLUSIONS:** Africa presents real opportunities that should encourage many pharmaceutical companies to really engage in innovative clinical research programs in a win-win approach.

PHP106
MARKET ANALYSIS IN REGARD TO BIOLOGICALLY ACTIVE SUPPLEMENTS AND MEDICINES IN ARMENIA
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OBJECTIVES: Although, whether biologically active supplements (BAS) are medicines or not is still debatable, BAS keep making their way to the customer basically through pharmacies. A worldwide tendency toward "greener" choices when purchasing health status modifiers (HSM) is well documented. Current endeavor studies the pharmaceutical market situation (PMS) in Armenia (2009 to 2013) in regard to growth trends both in US dollars turnover (USDT) and number of packs sold (NPS) of BAS versus medicines, stratified by five leading diseases (LD). **METHODS:** Statistical data on morbidity and mortality from the MOH RA were used to identify the leading five disease groups in newly identified cases. Further, statistical data on pharmaceutical market from "Pharmexpert" Marketing Research Centre (analysis of wholesale sales volumes to the retail drug stores) were investigated to identify growth rate (GR) trends of interest. **RESULTS:** A PMS analysis has shown 11.92% and 6.65% of GR (medicines and BAS combined) in USDT and NPS respectively. For medicines alone the results were: 11.56% and 6.23% GR in USDT and NPS respectively. As for BAS, USDT and NPS, the figures were 21.48% and 15.36% of GR respectively. A further stratification by five LM has shown the highest GR in medicines used for treatment of Uro-Genital diseases (13.24% and 10.01% for USDT and NPS respectively), whereas in BAS the highest GR was in the Cardio-Vascular group (63.84% and 92.82% for USDT and NPS respectively). **CONCLUSIONS:** The results of the study go in line with the worldwide trends in shifting whenever possible, from medicines to using HSM of natural origin, of which BAS are a major part. The study does not claim to identify the underlying compound factors influencing such a tendency. However, the reality at had compels for studying the levels of BAS administration and use literacy among both HSM prescribers and consumers.

PHP107
IMPACT OF 2011 GERMAN HEALTH CARE REFORM ON PRICES
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OBJECTIVES: This study seeks to evaluate the incremental benefit scores granted to new medicines under the 2011 AMNOG reform in Germany, and if there is a correlation between that score and the extent of price reduction after negotiation with the statutory health insurance fund. **METHODS:** Resolutions issued by the G-BA related to all drugs which achieved the early benefit assessment process between January 2011 and June 2014 were reviewed to determine whether the drugs were deemed to bring an added benefit. Under AMNOG, an added therapeutic benefit score is granted to medicines according to 6 categories (major, considerable, minor, non-quantifiable, no or less added benefit versus the comparator). As part of the study, IHS created an overall quantitative innovation score for each product, based on any and all qualitative ratings granted by the G-BA in each patient subgroup. The score ranged from 0 (no added benefit proven) to 4 (major added benefit) and was weighted against each patient population. An average price reduction per innovation score range was then calculated. **RESULTS:** Out of the 76 drugs assessed in the study, a total of 44 were deemed to bring an added benefit over the appropriate comparator by the G-BA, of which 34 had achieved price negotiation as of end of May 2014. These ratings translated into an average innovation score of 1.77, and were subject to price cuts averaging 21.7%. **CONCLUSIONS:** Our analysis highlights that innovative medicines can be subject to significant price cuts in Germany. No correlation between the innovation score and subsequent price cuts could be derived, as many other factors, including the initial price difference between the new medicine and the comparator, enter into account as part of the price negotiations.

PHP108
REAL WORLD DATA (RWD) AT T=4 IN THE NETHERLANDS
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OBJECTIVES: If the cost-effectiveness and appropriate use of a drug in the Netherlands cannot yet be determined during the initial reimbursement assessment (T=0), this will be done at the re-evaluation 4 years later (T=4) using RWD. Outcome research is an essential part of the re-evaluation of conditionally reimbursed drugs. The objective was to assess the reasons for accepting or rejecting outcome research results to confirm cost-effectiveness and appropriate use of a drug at T=4. **METHODS:** The website of Zorginstituut Nederland (ZiNL) was searched for re-evaluations of drugs published between January 2006 and May 2014. ZiNL's assessments of the outcome research were compared. **RESULTS:** ZiNL published the outcome research results for four drugs. The outcome research results for agalsidase alfa & beta were accepted for demonstrating cost-effectiveness and appropriate use in Fabry's disease. The T=4 results for omalizumab for the treatment of asthma were not accepted due to comments about population and model input, lack of statistical calculations and size of the incremental effects. Ranibizumab's results for age-related macular degeneration were not accepted because of a wrong comparator, lack of long term data, assumptions on risks and mortality, and uncertainties around health care costs and ICER sensitivity. Finally, ZiNL considered the appropriate use of alglucosidase alfa for Pompe's disease to be unsubstantiated because of the population choice for the ICER calculation and the use of a higher dose than the registered dose which was not supported by scientific data. The outcome results of alglucosidase alfa for cost-effectiveness were accepted, however. **CONCLUSIONS:** Although at T=0 ZiNL provided feedback regarding the design of the outcome research study, most of ZiNL's comments were on the final methodology used. The outcome research studies were considered to be of mixed quality and the results could often not substantiate the claim of cost-effectiveness and appropriate use.

PHP109
OPPORTUNITY COSTS OF IMPLEMENTING NICE DECISIONS IN NHS WALES
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OBJECTIVES: In the UK, when a technology is recommended by the National Institute for Health and Care Excellence (NICE), the NHS is mandated to provide the funding to accommodate it within three months. Explicit in NICE's approach to health technology assessment (HTA) is the assumption that the approval of a new, cost-increasing technology will result in the displacement of an existing, less cost-effective health care programme from elsewhere in the NHS. The objective of this study is to identify the actual opportunity costs of specific NICE decisions by documenting how *in practice* local commissioners in Wales accommodated financial shocks arising from technology appraisals (TAs). **METHODS:** Interviews were conducted with Finance and Medical Directors from all seven Local Health Boards (LHBs) in NHS Wales. These interviews covered prioritisation processes, as well as methods of financing NICE TAs and other financial "shocks" at each LHB. We then undertook a systematic identification of themes and topics from the information recorded. **RESULTS:** The financial impact of NICE TAs is generally planned for in advance and the majority of LHBs have contingency funds available for this purpose. Efficiency savings (defined as reductions in costs with no assumed reductions in quality) were a major source of funds for all cost pressures. Service displacements were not linkable to particular TAs and there appears to be a general lack of explicit prioritisation activities. The Welsh Government has, on occasion, acted as the funder of last resort. **CONCLUSIONS:** The assumption that newly recommended technologies will displace existing NHS services does not appear to hold true in practice. As the additional cost pressures represented by new NICE TAs are likely to be accommodated by greater efficiency and increased expenditure, the true opportunity cost of HTA decisions is extremely difficult to quantify and may even lie outside the NHS.

PHP110
FUNDING INTEGRATED HEALTH CARE SERVICES
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OBJECTIVES: Western countries health care systems face growing challenges dealing with disability and death due to chronic diseases. Coordination of health care services has become unavoidable. Our objective was to identify the Integrated Health Services (IHS) in the major health care markets and understand the funding process. **METHODS:** IHS provided in Europe, North America and Asia were identified through a literature review. Future perspectives were based on country policy and observed trends. **RESULTS:** All studied countries developed IHS such as disease management, case management and telemonitoring services, with the United States (US) being the major market. However, levels of implementation, funding processes and stakeholders involved vary highly between different countries. Funding processes such as fee for services and capitation are widely used in all studied countries and Payment for performance (P4P), bundled payment and diagnosis-related group (DRG) for outpatient are in progress, used mainly in the US, and to a much lower extent in the United Kingdom (UK) and Germany. Multiple IHS exists in France, though inappropriate incentives hinder their development. In the US, under the Affordable Care Act, Accountable Care Organisations (ACOs) are testing a range of payment models (capitation, one-sided/two-sided shared saving fee-for-service, bundled/episode payments and P4P). **CONCLUSIONS:** IHS have become ubiquitous in all health organisations. All countries studied are expected to develop more IHS based on P4P schemes. The P4P of ACOs represents the ultimate gold mine for the development of paid health care services. Even if this concept is still in progress it will be leading this market. This will also change dramatically the way pharmaceutical companies will do business. Drugs will have to be integrated in a more complex selling process driven by medium to long term outcome impact. The management of confounding factors on outcomes is critical and represents the challenge for ACOs.

PHP111
ACCEPTANCE OF TELEMONITORING BY HEALTH CARE PROFESSIONALS IN GERMANY: A QUESTION OF FINANCIAL CONDITIONS
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OBJECTIVES: The comprehensive implementation of telemedical applications still lags behind expectations in Germany. One of the main barriers to innovation is a lack of both a willingness to adapt and user's acceptance. Processes of adoption and acceptance are characterized by a network of different factors which influence attitude and behavior which differ in severity depending on each user group. One key factor for accepting and adopting an innovation is the economic framework. We therefore examined the influence of economic factors influencing the

attitudes of physicians in Germany towards telemonitoring. **METHODS:** In the first step fundamental determinants of adoption and acceptance were identified using a systematic literature review and transferred to a theoretical effect model. This model was used to create a quantitative questionnaire which was then used to interview online 201 outpatient and inpatient physicians from different fields of medicine. The participants (84.3% male, mean age 53 years) were asked to assess the empirically based economic attributes of telemonitoring regarding its implementation. **RESULTS:** The results show a lack of information regarding the financial risks of using telemedical technology, as only 14% of those interviewed said they felt sufficiently informed about the subject. Barriers to using telemedicine technology include missing arrangements for reimbursement, uncertain financial advantages and missing business models. In addition, the cost of implementation are indistinct for a broad majority of interviewees. On the other hand, in most queried dimension the user see a potential financial benefit due to telemedicine. The positive effects expected from telemonitoring were rated much better rated by those who already used telemonitoring in their professional life. **CONCLUSIONS:** In addition to a more precise legal framework, information security and quality-based guidelines, more emphasis must be placed on economic issues. It is also imperative that physicians be better informed about all aspects of telemedicine.

PHP112

EXTERNAL REFERENCE PRICING IMPACT OF THE INTEGRATION OF THE AMNOG DISCOUNT IN THE LIST PRICE

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OBJECTIVES: In Germany, the AMNOG law replaced free pricing by the early benefit assessment (EBA) since 2011. Manufacturers are free to set new drugs' prices for up to one year after which the price is negotiated between manufacturers and insurers based on the EBA. The negotiated price, that is consistently lower than the one set by the manufacturers, is considered as the official list price since April 1st2014. The objective of this study is to evaluate the potential impact of this new law on the external reference pricing (ERP) in Europe. **METHODS:** A simulation model, developed for the European Commission, was used to simulate ERP's impact on Boceprevir and Telaprevir prices after five years, following the discount's inclusion on the official list price in Germany. ERP impact on price was evaluated in Belgium, Czech Republic, France, Germany, Luxembourg, Norway, Slovakia, Slovenia, Sweden, Switzerland, The Netherlands and UK for Boceprevir and in Belgium, Finland, France, Germany, Luxembourg, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland, The Netherlands and UK for Telaprevir. National policy inputs were obtained from a literature review and consultation of international organisations' representatives. Prices used at the start of the simulation were obtained from IMS. **RESULTS:** After five years, the relative price variation of Boceprevir between the scenario with AMNOG discount integrated in the list price and with no discount integrated in the list price was null in Belgium, Luxembourg, Sweden and UK, of -8.1% in the Netherlands, -9.2% in Norway, nearly -10% in Czech Republic, France, Slovakia and Switzerland, and -14% in Slovenia. For Telaprevir, the price variation was null in Belgium, Finland, Luxembourg, Slovenia and the UK, of -0.8% in Slovakia, -2.5% in the Netherlands, -2.9% in Norway, -6.9% in France and -8.6% in Switzerland. **CONCLUSIONS:** Integrating AMNOG discount in the list price impacts significantly the price in European countries due to ERP.

PHP114

A COMPARISON OF COBB-DOUGLAS, TRANSLOG AND ADDITIVE MODELS OF THE PRODUCTION FUNCTIONS OF INPATIENT SERVICES IN PUBLIC HOSPITALS

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OBJECTIVES: To investigate the adequacy of the widely used Cobb-Douglas and translog models of the production functions of hospital in-patient services. **METHODS:** To investigate the adequacy of the widely used Cobb-Douglas and translog models of the production functions of hospital in-patient services, we fitted these and additive models (AMs) to *2002-2007* data for the gynaecology and obstetrics, general and digestive surgery, internal medicine, and traumatology and orthopaedic surgery services of 10 public hospitals in Galicia (NW Spain). Production, measured as admissions weighted in accordance with their diagnosis-related groups (DRGs), was treated as a function of physician full-time equivalents as surrogate labour factor and number of beds as surrogate capital factor. **RESULTS:** For the *General Surgery* specialty the findings for the CD model indicate a better fit than those for the Translog and the AM, as it is shown by AIC value while R^2 (CD=96.32, Translog=96.30, AM=98.30) prefers the flexible AM. This is a good example of using AM as a tool for checking the behaviour of existing parametric models. In this case we can be confident with Cobb-Douglas estimations. Findings for the *Internal Medicine* specialty indicate responses for the CD (AIC=-17.789) seems to be more "robust" than those based on the AM (AIC=-13.113) and Translog (AIC=-15.939) models, R^2 (CD=95.88, Translog=95.80, AM=97.90) shows better fit for the AM regression model. **CONCLUSIONS:** Our results suggest that while the Cobb-Douglas and translog models suffice to represent the production functions of services with low average DRG weight, the greater flexibility of models such as AMs is required for services with higher average DRG weight.

PHP115

GENDER-RELATED BEHAVIORS IN DRUG CONSUMPTION IN ITALY

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OBJECTIVES: Sex differences in drug use have been demonstrated in several therapeutic area. However, there is a lack of overviews on sex differences of drug use in entire populations. The aim of this study was to describe difference in prevalence of drugs use in the entire population in Italy between men and women. **METHODS:** We performed a cross-sectional study using 2012 data from the IMS LifeLink Treatment DynamicsTM LRx Database, an italian-based administrative database that includes all prescribed drugs that are reimbursed by the Italian National Healthcare System. Pharmacological groups accounting for >90% of the total volume in Defined Daily Doses were considered. Crude and age adjusted differences in prevalence were calculated as risk ratios of women/men. **RESULTS:** 31 therapeutic categories were analyzed and there are significant differences for 30 of them. The largest sex difference in prevalence was found for thyroid preparations that were more common in women (59.3/1000 women and 10.9/1000 men, respectively). This was followed by antiinflammatory and antirheumatic products (114.0/1000 women and 67.4/1000 men) and antidepressants (62.1/1000 women and 26.8/1000 men). The pharmacological groups with the largest relative differences of dispensed drugs were drugs affecting bone structure and mineralization (RR 12.4), calcium (RR 7.0) and thyroid therapy (RR 4.9), which were dispensed to women to a higher degree. Antigout-agents (RR 0.4), vasodilators used in cardiac diseases (RR 0.7) and ACE inhibitors (RR 0.7) were dispensed to men to a larger proportion. **CONCLUSIONS:** This is the first Italian study that shows substantial differences between men and women. Our findings are congruent with those reported previously in the literature. Some of differences may be explained by variations in disease prevalence and severity, pathophysiology, or by other biological differences. However, it is also evident that other differences lack a rational medical explanation.

PHP116

VALUE OF LIFE AND COST OF PRE-MATURE DEATHS WITH THE PERSPECTIVE OF PRODUCTIVITY AS NET TAX REVENUE: A COMPARISON IN USA, CANADA, JAPAN AND AUSTRALIA

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OBJECTIVES: The Human Capital Theory emphasizes investments to the health care sector as an important element in achieving and sustaining economic development. Investments to health care sector improves macro and micro economic outcomes for the whole society. The aim of this study is to calculate the possible produced value for a life-time term (VLT) and cost of pre-mature deaths (CPD) from the productivity for USA, Canada, Japan and Australia. **METHODS:** Net present value (NPV) of the taxes and spending for each year were calculated. For calculating NPV in the government perspectives, two modelling approaches were combined, human capital modelling based on lives saved and lost productivity, and generational accounting, which accounts for a range of other government fiscal transfers to citizens. The possible produced value for a life-time term for each country were assumed as calculating the total NPV for each country depending on the countries life expectancy. CPD for each countries were assumed as the difference between NPV on the year of life expectancy and each decades as life years 60, 50, 40, 30, 20, 10. The economic values for the model of each country derived from World Bank, OECD, UNESCO or WHO. **RESULTS:** Possible produced value for a life-time term for each country were calculated as US $ 1.415.530, US$ 774.663, US$ 238.236 and US$ 2.917.835 for USA, Canada, Japan and Australia, respectively. CPD per person for USA were calculated as US$ -1.526.126, US$ -1.661.257, US$ -1.300.923, US$ -796.547, US$ - 351.827 and US$ -40.507 for the life years 10, 20, 30, 40, 50 and 60 respectively. The trend was same for Canada, Japan and Australia. **CONCLUSIONS:** However the study was based on a hypothetical model that calculated the NPV with the taxes and spending in a life-time term, the results of each country were parallel.

PHP117

HOME PHARMACIES: AN INSIGHT IN SELF-MEDICATION PRACTICE

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OBJECTIVES: Based on the content of drugs in households, it is possible to examine the inclination of patients towards self-medication and groups of drugs that are commonly used for this purpose. Taking into consideration the above, the present study aimed to investigate the self-medication practice, with an emphasis on self-medication with prescription only medications. **METHODS:** The study was performed in 8 months period and involved 383 randomly selected households. The study consisted of a personal insight into the inventory of all drugs. The interviewer recorded the total number of drugs in households and asked respondents for each the drug was obtained on prescription or bought in the pharmacy for self-medication. After the data were collected, drugs were classified according the Anatomical Therapeutic Chemical (ATC) Classification System. Drugs were also classified according to ALIMS (Medicines and Medical Devices Agency of Serbia) into two groups: prescription only medication (POM) and OTC (Over the Counter) drugs and then analyzed. **RESULTS:** The total number of drug items present in the 383 households was 4384 with an average of 11.4±5.8 per household. More than a half of drugs in households were prescription only medications (58,5%). Approximately one third of these drugs were obtained without prescription. The most common prescription only medications obtained without prescription were anti-inflammatory and antirheumatic products (41,8%) and antibacterials for systemic use (12,4%). Ibuprofen (61,0%), diclofenac (27,8%) and nimesulide (8,2%) were the most common self-medicated drugs in the group of antiinflamatory drugs, while the most frequently self-medicated antibiotics were cefalexin (25,7%), doxyciclin (18,6%), cotrimoxazole (17,7%). **CONCLUSIONS:** In conclusion, our survey indicated that self-mediation with prescription drugs appeared to be a rather common practice, which is far away from the concept of "responsible self-medication", especially regarding antibiotics. **ACKNOWLEDGEMENT:** This work was supported by the Ministry of Science and Technological development, Republic of Serbia, project No. 41012.